

PLEASE NOTE -

\* Copies not attached as previously submitted to or cited by the USPTO in parent application US 10/183,174

\*\* Copies not attached as previously submitted to or cited by the USPTO in grandparent application US 09/112,767

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>		Application Number	
		Filing Date	
		First Named Inventor	Kia Silverbrook
		Art Unit	
		Examiner Name	
Sheet 1 of 8	Attorney Docket Number	ZG002US	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-5,697,144 *	12.16.1997	Mitani et al	
		US-5,719,604	02.17.1998	Inui et al	
		US-5,666,141	09.09.1997	Matoba et al	
		US-4,672,398	06.09.1987	Kuwabara et al	
		US-4,737,802	04.12.1988	Mielke	
		US-5,029,805	07.09.1991	Albarda et al	
		US-5,258,774	11.02.1993	Rogers	
		US-4,553,393	11.19.1985	Ruoff	
		US-4,864,824	09.12.1989	Gabriel et al	
		US-4,423,401	12.27.1983	Mueller	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		EP 0 416 540 A2 *	13.03.1991	Usui et al	
		EP 1 057 637 *	12.06.2000	Canon KK	
		EP 1 057 639 *	12.06.2000	Canon KK	
		WO 00/48938 *	08.24.2000	Silverbrook	
		JP 4 04001051 A **	01.06.1992	Komai	
		EP 0 713 774 A2	05.29.1996	Sharp Kabushiki Kaisha	
		DE 195 16 997	11.16.1995	Sharp KK	
		DE 196 23 620 A1	12.19.1996	Sharp KK	
		JP 2 108544 (Abstract)	04.20.1990	Seiko Epson Corp	
		JP 2 92643 (Abstract)	04.03.1990	Seiko Epson Corp	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

\* Copies not attached as previously submitted to or cited by the USPTO in parent application US 10/183,174  
 \*\* Copies not attached as previously submitted to or cited by the USPTO in grandparent application US 09/112,767

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	
				Filing Date	
				First Named Inventor	
				Art Unit	
				Examiner Name	
Sheet	2	of	8	Attorney Docket Number	
				ZG002US	

[illegible]

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
		JP 4 353458 (Abstract) ✓	12.08.1992	Brother Ind Ltd		
		JP 6 '91865 (Abstract)	04.05.1994	Seikosha Co Ltd		
		JP 6 '91866 (Abstract) ✓	04.05.1994	Seikosha Co Ltd		
		JP 2 265752 (Abstract) ✓	10.30.1990	Matsushita Electric Ind Co Ltd		
		EP 0 634 273	01.18.1995	Sharp Kabushiki	Kaisha	
		DE 195 32 913	03.28.1996	Sharp K.K		
		JP 58 112747 (Abstract)	07.05.1983	Fujitsu KK		
		DE 43 28 433	03.02.1995	Heidleberger Druckmaschinen AG		
		JP 61 025849 (Abstract)	02.04.1986	Canon Inc		
		JP 01 128839 (Abstract)	05.22.1989	Ricoh Co Ltd		

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

\* Copies not attached as previously submitted to or cited by the USPTO in parent application US 10/183,174  
 \*\* Copies not attached as previously submitted to or cited by the USPTO in grandparent application US 09/112,767

Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				Application Number	
				Filing Date	
				First Named Inventor	Kia Silverbrook
				Art Unit	
				Examiner Name	
Sheet	3	of	8	Attorney Docket Number	ZG002US

[illegible]

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. 1	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Country Code 3 - Number 4 - Kind Code 5 (if known)				
		JP 04 126255 (Abstract)	04.27.1992	Seiko Epson Corp		
		GB 2 262 152	06.09.1993	Willett Int Ltd		
		DE 195 16 997	11.16.1995	Sharp K.K		
		JP 05 318724 (Abstract)	12.03.1993	Seikoshā Co Ltd		
		JP 02 162049 (Abstract)	06.21.1990	Seiko Epson Corp		
		DE 32 45 283	06.07.1984	Siemens AG		
		JP 04 368851 (Abstract)	12.21.1992	Seiko Epson Corp		
		JP 02 158348 (Abstract)	06.18.1990	Minolta Camera Co Ltd		
		JP 03 112662 (Abstract)	05.14.1991	Seiko Epson Corp		
		JP 03 653348 (Abstract)	03.20.1991	Matsushita Electric Ind Co		

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

1 Applicant's and not considered. Include copy of this form with next communication to applicant.  
 2 Applicant's unique citation designation number (optional). 3 See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PLEASE NOTE -

\* Copies not attached as previously submitted to or cited by the USPTO in parent application US 10/183,174

\*\* Copies not attached as previously submitted to or cited by the USPTO in grandparent application US 09/112,767

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	
				Filing Date	
				First Named Inventor <b>Kia Silverbrook</b>	
				Art Unit	
				Examiner Name	
Sheet	5	of	8	Attorney Docket Number <b>ZG002US</b>	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
		WO 94 18010	08.18.1994	Domino Printing Sciences PLC		
		EP 0 398 031	11.22.1990	Seiko Epson Corp		
		EP 0 427 291	05.15.1991	Seiko Epson Corp		
		JP 01 115639 (Abstract)	05.08.1989	Ricoh Co Ltd		
		JP 58 116165 (Abstract)	07.11.1983	Canon K.K		
		EP 0 627 314	12.07.1994	Olivetti Canon Ind SPA		
		JP 61 268453 (Abstract)	11.27.1986	Olympus Optical Co Ltd		
		JP 04 118241 (Abstract)	04.20.1992	Seiko Epson Corp		
		EP 0 506 232	09.30.1992	Videojet Systems Int, Inc		
		JP 07 314665 (Abstract)	12.05.1995	Canon Inc		

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

\* Copies not attached as previously submitted to or cited by the USPTO in parent application US 10/183,174  
 \*\* Copies not attached as previously submitted to or cited by the USPTO in grandparent application US 09/112,767

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	
				Filing Date	
				First Named Inventor	Kia Silverbrook
				Art Unit	
				Examiner Name	
Sheet	6	of	8	Attorney Docket Number	ZG002US

[illegible]

FOREIGN PATENT DOCUMENTS					
Examiner Initials	Cite No.	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)			
		JP 03 180350	08.06.1991	Seiko Epson Corp	
		WO 97 12689	04.10.1997	The Board of Trustees of the Leland Stanford University	
		JP 02 050841 (Abstract)	02.20.1990	Seiko Epson Corp	
		EP 0 510 648	10.28.1992	Ivri Yehuda	
		JP 05 28765 (Abstract)	10.29.1993	Canon Inc	
		JP 04 141429 (Abstract)	05.14.1992	Seiko Epson Corp	
		JP 01 105746 (Abstract)	04.24.1989	Ricoh Co. Ltd	
		GB 792 145	03.19.1958	Technograph Printed Circuits Ltd	
		EP 0 750 993	01.02.1997	Canon K.K	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

\* Copies not attached as previously submitted to or cited by the USPTO in parent application US 10/183,174  
 \*\* Copies not attached as previously submitted to or cited by the USPTO in grandparent application US 09/112,767.

Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				Application Number	
				Filing Date	
				First Named Inventor	Kia Silverbrook
				Art Unit	
				Examiner Name	
Sheet	7	of	8	Attorney Docket Number	ZG002US

[illegible][illegible]

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

1 Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	
		Filing Date	
		First Named Inventor	Kia Silverbrook
		Group Art Unit	
		Examiner Name	
Sheet 8 of 8	Attorney Docket Number	ZG002US	

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
		Derwent Abstract Accession No. 2000-405730/35, Class P75;T04, JP 2000141656 A (Ricoh KK) May 23, 2000 *	
		NOWOROLSKI, J. MARK et al, "Process for in-plane and out-of-plane single-crystal-silicon thermal microactuators". Sensors and Actuators, A, CH, Elsevier Sequoia S.A., Lausanne, Vol 55, no. 1, 15 July 1996, pp 65-69, XP004077979 ISSN: 0924-4247.	
		ATAKA, MANABU et al, "Fabrication and Operation of Polymide Bimorph Actuators for Ciliary Motion System". Journal of Microelectromechanical Systems, US, IEEE Inc. New York, Vol. 2, no. 4, 1 December 1993, pp 146-150, XP000443412, ISSN: 1057-7157.	
		YAMAGATA, YUTAKA et al, "A-Micro-Mobile-Mechanism-Using-Thermal-Expansion and its Theoretical Analysis". Proceeding of the workshop on micro electro mechanical systems (MEMS), US, New York, IEEE, Vol. Workshop 7, 25 January 1994, pp 142-147, XP000528408, ISBN: 0-7803-1834-X.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.